
**FISHERY MANAGEMENT PLAN FOR U.S. WEST COAST
 FISHERIES FOR HIGHLY MIGRATORY SPECIES
 AS AMENDED
 APPENDIX D
 INTERACTIONS WITH PROTECTED SPECIES**

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Note: This appendix comprises Chapter 6.0 in the original FMP/FEIS published in August 2003.

D.1 Introduction

This section examines the interaction between protected species and HMS fisheries under consideration in this FMP. As a point of clarification, interactions are different than bycatch. Interactions take place between fishing gears and marine mammals, turtles and birds while bycatch consists of discards of fish. Following a brief review of the three acts (Marine Mammal Protection Act, Endangered Species Act and Migratory Bird Treaty Act) affecting protected species, the interactions between HMS gears and each species will be examined. Additionally, the interaction of seabirds and longline fisheries are considered under the auspices of the United States “National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries” (NPOA-Seabirds). While sea turtles are defined as fish in the Magnuson-Stevens Act, and thus technically are bycatch, they are discussed in this section because of their protected status (NMFS, 1998) under the ESA.

D.1.1 Interactions and the Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972 as amended (MMPA) is one of the principal federal statutes that guides marine mammal species protection and conservation policy. In the 1994 amendments, section 118 established the goal that the incidental mortality or serious injury of marine mammals occurring during the course of commercial fishing operations be reduced to insignificant levels approaching a zero mortality rate goal (ZMRG) and serious injury rate within 7 years of enactment (i.e., April 30, 2001). In addition, the amendments established a three-part strategy to govern interactions between marine mammals and commercial fishing operations. These include the preparation of marine mammal stock assessment reports, a registration and marine mammal mortality monitoring program for certain commercial fisheries (Category I and II), and the preparation and implementation of take reduction plans (TRP).

D.1.1.1 Species of Interest Under the MMPA

The following marine mammal species occur off the West Coast that are or could be of concern with respect to potential interactions with HMS fisheries. A synopsis of stock assessment information for marine mammals is presented in Appendix E.

Cetaceans

North Pacific right whale

Sei whale

Blue whale

Fin whale

Humpback whale

Sperm whale

Bryde's whale

Sei whale

Minke whale

Killer whale

Short-finned pilot whale

Baird's beaked whale

Cuvier's beaked whale

Pygmy sperm whale

Harbor porpoise

Dall's porpoise

Pacific white-sided dolphin

Risso's dolphin

Bottlenose dolphin

Striped dolphin

Short-beaked common dolphin

Long-beaked common dolphin

Northern right-whale dolphin

Eubalaena glacialis

Balaenoptera borealis

Balaenoptera musculus

Balaenoptera physalus

Megaptera navaeangliae

Physeter macrocephalus

Balaenoptera edeni

Balaenoptera borealis

Balaenoptera acutorostrata

Orcinus orca

Globicephala macrorhynchus

Berardius bairdii

Ziphius cavirostris

Kogia breviceps

Phocoena phocoena

Phocoenoides dalli

Lagenorhynchus obliquidens

Grampus griseus

Tursiops truncatus

Stenella coeruleoalba

Delphinus delphis

Delphinus capensis

Lissodelphis borealis

Pinnipeds

Steller (=northern) sea lion

California sea lion

Guadalupe fur seal

Northern elephant seal

Harbor seal

Northern fur seal

Eumetopias jubatus

Zalophus californianus californianus

Arctocephalus townsendi

Mirounga angustirostris

Phoca vitulina richardsi

Callorhinus ursinus

The NMFS Southwest Fisheries Science Center recently published "U.S. Pacific Marine Mammal Stock Assessments: 2001" (Carretta et al. 2001, NOAA Technical Memorandum NOAA-TM-NMFS-SWFSC-317, December 2001). This presents the most current information on the status of the stocks listed above with the exception of Steller sea lion. The report also presents estimates of takes in fisheries. Of these species, only Guadalupe fur seal is considered a depleted and "strategic" stock; it also is listed as threatened under the

ESA. The population trends for these species off the West Coast are generally increasing. Mortality due to interactions with fishing gear by vessels off the West Coast is estimated to be well within the Potential Biological Removal (PBR) levels and considered insignificant under the MMPA.

D.1.1.2 Management Under the MMPA

Under MMPA requirements, NMFS produces an annual List of Fisheries that classifies domestic commercial fisheries, by gear type, relative to their rates of incidental mortality or serious injury of marine mammals. The List of Fisheries includes three classifications; following is a description of potential injury and affected West Coast fisheries under consideration:

1. Category I fisheries are those with frequent serious injury or mortality to marine mammals (drift gillnet);
2. Category II fisheries are those with occasional serious injury or mortality (includes pelagic longline and purse seines <400 short tons, or 363 mt, carrying capacity); and
3. Category III fisheries are those with remote likelihood of serious injury or mortality to marine mammals (harpoon and surface troll).

Large tuna purse seiners (>400 short tons) fishing in the eastern tropical Pacific Ocean (EPO) are excluded from being categorized under section 118 because they are fishing under another section of the MMPA. Commercial passenger fishing vessel (charter boat) fisheries are subject to section 118 and are listed as a Category III fishery. Recreational vessels are not categorized since they are not considered commercial vessels.

Fishermen participating in Category I or II fisheries are required to register under the MMPA and to accommodate an observer aboard their vessels if requested. Vessel owners or operators, or fishermen, in Category I, II, or III fisheries must report all incidental mortalities and serious injuries of marine mammals during the course of commercial fishing operations to NMFS Headquarters. There are currently no regulations requiring recreational fishermen to report takes, nor are they authorized to have incidental takes (i.e., they are illegal).

Section 118(f), which was included in the 1994 amendments of the MMPA, established the take reduction team (TRT) process which allows development of take reduction plans for Category I and II fisheries if the determination is made that the fishery has a high level of mortality and serious injury across a number of strategic marine mammal stocks. The MMPA defines a strategic stock as a (1) marine mammal species that is listed as endangered or threatened under the ESA; (2) marine mammal stock for which the human-caused mortality exceeds the PBR level; or (3) marine mammal stock which is declining and likely to become listed as a threatened species under the ESA. The PBR level is the maximum number of animals, not including natural mortalities, that may be annually removed from a marine mammal stock while allowing that stock to reach or maintain its optimal population level.

Take reduction teams are made up of individuals who represent the span of interests affected by the strategies to reduce takes, including commercial and recreational fishing industries, fishery management councils, interstate commissions, academic and scientific organizations, state officials, environmental groups, Native Alaskans or other Native American interests, if appropriate, and NMFS representatives. The immediate goal of a take reduction plan is to reduce, within six months of its implementation, the incidental take of affected marine mammal stocks to below their potential biological removal (PBR) levels. The long-term goal of a take reduction plan is to reduce, within five years of its implementation, the incidental take of marine mammals to insignificant levels approaching a zero mortality rate goal (yet to be defined) and serious injury rates. The TRT develops a take reduction plan which is forwarded to the Secretary of Commerce with recommendations for implementation. The TRT relevant to these HMS fisheries is the Pacific Offshore Cetacean Take Reduction Team (POCTRT).

D.1.1.3 Marine Mammal Protection in the Drift Gillnet Fishery

The POCTRT was formed in February 1996 to address the incidental mortality and serious injury of strategic marine mammal stock takes by the CA/OR drift gillnet fishery. In August 1996, the POCTRT recommended to NMFS four primary strategies to reduce marine mammal takes. They were:

1. Require the top of the submerged net to be a minimum of 36 ft below the surface;
2. Conduct experiments on the use of pingers to reduce marine mammal entanglements;
3. Recommend the states issue no new drift gillnet permits; and
4. Require permit holders to attend mandatory skipper education workshops.

After the 1996-97 fishing season, the pinger experiment appeared to be successful with a 78% reduction in the level of cetacean entanglements. The use of pingers was mandated, as well as the requirement relating to minimum net depth and mandatory skipper workshops when final regulations implementing the Take Reduction Plan were promulgated in October 1997.

At their annual meeting in 2000, the POCTRT discussed the 1999-2000 season. Based on observer data during the season, the entanglement of cetaceans, especially common dolphins, had increased for the first time since pinger use became mandatory. The increase in take was particularly notable in the months of December 1999 and January 2000. This trend appeared to replicate a similar increase in January 1999 when takes were also elevated to pre-pinger levels. Although takes of strategic marine mammal stocks addressed by the Pacific Offshore Cetacean Take Reduction Plan were below PBR, and takes were below 10% of PBR for all but four species, the POCTRT was concerned about the increase in overall cetacean take.

Since the POCTRT was unable to ascertain whether the problem was a result of a decline in pinger effectiveness, or the possibility that the pingers utilized were not fully functioning, or of some other factor, the POCTRT recommended a package of measures for the next fishing season with the goal of addressing some of the potential causes for the possible increasing trend that had been identified and obtaining additional data to assist in its analysis of appropriate recommendations. The measures included the ones then in place (numbers 1-4 below) and two additional ones. The recommendations included:

1. Continued mandatory deployment of 36 ft net buoy line extenders;
2. Continued use of pingers;
3. Continuation of the voluntary program to reduce the number of permits;
4. Continuation of mandatory skipper education workshops;
5. Better data gathering and analysis capabilities; and
6. Increased enforcement and compliance.

At their annual meeting in 2001, the POCTRT discussed the 2000-2001 season. Based on observer data during the season, the entanglement of cetaceans was down from the prior season but still not at the low levels of the 1998-1999 season, causing some concern about the inconsistency of takes by season. There were no observed takes of strategic stocks during the season. Although takes of marine mammal species addressed by the Pacific Offshore Cetacean Take Reduction Plan continue below PBR, and takes are below 10% of PBR for all but four species (sperm whale, fin whale, northern right-whale dolphin, and short-finned pilot whale), the POCTRT was still concerned about the takes of those animals above 10% of PBR.

The linkage between the MMPA and ESA is an important factor in management of the drift gillnet fishery. If a fishery incidentally takes marine mammal species that are listed under the ESA during the course of commercial fishing activity, a permit under 101(a)(5)(E) of the MMPA must be obtained to authorize the lawful incidental taking of those species under the MMPA. A permit may be issued during a period of up to 3 consecutive years if:

1. The incidental mortality and serious injury from commercial fisheries will have a negligible impact on such species or stock;

2. A recovery plan has been developed or is being developed for such species or stock pursuant to the ESA;
3. A monitoring program is established under section 118(d) of the MMPA;
4. Vessels are registered in accordance section 118(c) of the MMPA; and
5. A take reduction plan has been developed or is being developed for such species or stock under section 118(f) of the MMPA.

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably likely to adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 226.103). In 1990, the Marine Mammal Commission (MMC) submitted guidelines to NMFS to govern the incidental taking of marine mammals in the course of commercial fishing operations. In those guidelines, the MMC recommended NMFS determine negligible impact if the mortality and serious injury incidental to commercial fishing operations would cause no more than a 10% increase in the time to recovery. Participants at NMFS' 1994 workshop to prepare initial draft guidelines for calculating PBR and for writing the draft stock assessment reports agreed, and determined that authorized levels of human-related mortality should increase recovery time of endangered stocks by no more than 10%. Therefore, a default recovery factor of 0.1 was chosen to use in the PBR equation for endangered stocks of marine mammals (Barlow et al., 1995). Using a PBR containing a recovery factor of 0.1 would allow a large portion of the stock's annual net production to be used for recovery rather than being authorized for removal due to incidental mortality. This would allow a large fraction of the net production of the population to contribute to population increase and eventual recovery, and thus have a relatively insignificant negative impact upon the population (Wade 1998). Therefore, when incidental mortality and serious injury was below the stock's PBR, such mortality and serious injury would have no more than a negligible impact on the stock.

On August 31, 1995 (60 FR 45399), NMFS issued permits for fisheries meeting the conditions under section 101(a)(5)(E) of the MMPA. At that time, NMFS did not issue a permit to the California/Oregon drift gillnet fishery for the CA/OR/WA and Mexico humpback whale stock or the CA/OR/WA sperm whale stock because NMFS was unable to determine that the estimated mortality and serious injury incidental to commercial fishing operations was negligible. In addition, in 1995, NMFS did not consider issuing a permit for the incidental mortality and serious injury of the CA/OR/WA fin whale stock because there had been no reported incidental takes at that time, and NMFS had no reason to anticipate any such takes. However, NMFS did determine that the mortality and serious injury incidental to commercial fishing operations were negligible for the eastern Steller sea lion stock and issued a permit for that stock.

Subsequently, on June 6, 2000 (65 FR 35904), NMFS proposed the issuance of a permit, for a period of 3 years, to authorize the incidental, but not intentional, taking of four stocks of threatened or endangered marine mammals by the CA/OR drift gillnet fishery under section 101(a)(5)(E) of the MMPA. On October 24, 2000, NMFS issued a permit to allow the incidental, but not intentional, taking of four stocks of endangered or threatened marine mammals to the CA/OR drift gillnet fishery: (1) fin whale, CA/OR/WA stock; (2) humpback whale, CA/OR/WA and Mexico stock; (3) Steller sea lion, eastern stock; and (4) sperm whale, CA/OR/WA stock. These permits may be suspended or revoked if the level of take is likely to result in an impact that is more than negligible. The permit was published in the Federal Register on October 30, 2000 (65 FR 64670).

Although not charged with reducing the take of sea turtles, at their annual meeting in 2001, the POCTRT discussed alternatives which might reduce the take of leatherback sea turtles in the DGN fishery. They proposed that NMFS consider the following alternative to the Biological Opinion of October 2000:

1. Closure of the region from 36° 15' N latitude to 45° 00' N latitude from August 15 through November 15;
2. Minimum extender length of 60 ft in the northern area;
3. Skipper workshops to educate skippers on how to reduce take, revive animals and use special tools to cut animals out of the net;
4. Increased observer coverage;
5. Closure of the fishery if more than one turtle was taken in the first two years or two were taken in three

- years; and
6. Re-evaluation of the plan when consultation is re-initiated.

The POCTRT also recommended a package of measures for the next DGN fishing season which included:

1. Continued mandatory deployment of 36 ft net buoy line extenders;
2. Continued use of pingers;
3. Continuation of the voluntary program to reduce the number of permits;
4. Continuation of mandatory skipper education workshops; and
5. Better data gathering and analysis capabilities.

The available observer data confirm that the regulations issued to implement the TRP have generally been quite effective in reducing marine mammal takes as intended.

D.1.1.4 Other Marine Mammal Management Concerns

Recreational and commercial fishers and others have frequently complained that the growth of marine mammal populations (and especially the California sea lion population) has caused several problems. First, marine mammals may frequently take fish catch off fishers' hooks or take large bites out of the caught fish. This either means that the fish will have no commercial value or will have to be discarded by the recreational fisher. There are no provisions in the MMPA and associated regulations to allow fishers to take serious measures to protect their catch. Further, marine mammals sometimes break into bait holding tanks. Second, fishers allege that growing marine mammal populations are exerting excessive mortality on fish populations and excessive pressure on other coastal resources. To the fishers, it is unrealistic to provide total protection to marine mammals when human populations and development have changed the environment so dramatically since the MMPA was enacted. Third, marine mammals may inflict mortality on species listed under the ESA (e.g., sea lions capturing salmon and steelhead in the locks connecting Puget Sound and Lake Union in Washington).

Of these interaction issues, only the first is relevant to this FMP. Marine mammal interactions with specific HMS fisheries are discussed in more detail in section D.2.

D.1.1.5 Measures to Avoid or Mitigate Takes Under the FMP

This FMP endorses and supports the management measures adopted under the MMPA to avoid and mitigate marine mammal takes in the drift gillnet fishery under the Take Reduction Plan prepared by the POCTRT. Nothing in this FMP or the proposed framework procedures is intended to supersede or limit the adoption of future regulations by the Secretary of Commerce under the MMPA provisions pertaining to the procedures and timelines for marine mammal take reduction plans and take reduction teams. The Council will have opportunity to participate on the POCTRT and to review and comment on any such proposals through regular notice and comment procedures for such rule-making. The Council also may offer management recommendations for consideration by the Secretary and the POCTRT. Some marine mammal interactions in other HMS fisheries (e.g., recreational fisheries interactions with sea lions) are not amenable to resolution under this FMP. Other marine mammal interactions (dolphins taken in large vessel purse seine fishing) are covered by existing international agreement and will not be affected by this FMP.

Observers will be required to be placed on many HMS fishing vessels under this FMP, and their reports will indicate whether there are additional concerns that should be addressed in the future. If so, action can be taken under the framework procedures.

D.1.2 Interactions and the ESA

The Endangered Species Act of 1973 as amended (16 U.S.C. 1531 *et seq.*) provides for the conservation and recovery of endangered and threatened species of fish, wildlife, and plants. The listing of a species is based

on the biological health of that species throughout its range or in a specific portion of its range in some instances. The status determination is either threatened or endangered. Threatened species are those likely to become endangered in the foreseeable future [16 U.S.C. § 1532(20)] if no action is taken to stop the decline of the species. Endangered species are those in danger of becoming extinct throughout all or a significant portion of their range [16 U.S.C. § 1532(20)]. Species can be listed as endangered without first being listed as threatened. The Secretary of Commerce, acting through NMFS, is authorized to list marine and anadromous fish species, marine mammals (except for walrus and sea otter), marine reptiles (such as sea turtles) and marine plants. The Secretary of the Interior, acting through the USFWS, is authorized to list walrus and sea otter, seabirds, terrestrial plants and wildlife, and freshwater fish and plant species.

In addition to listing species under the ESA, the service agency (NMFS or UFWS) generally must designate critical habitat for listed species concurrently with the listing decision to the “maximum extent prudent and determinable” [16 U.S.C. § 1533(a)(3)]. The ESA defines critical habitat as those specific areas that are essential to the conservation of a listed species and that may be in need of special consideration. Federal agencies are prohibited from undertaking actions that destroy or adversely modify designated critical habitat. Some species, primarily the cetaceans, which were listed in 1969 under the Endangered Species Conservation Act and carried forward as endangered under the ESA, have not received critical habitat designations.

D.1.2.1 Species Listed

The following species that occur in the areas in which West Coast HMS fisheries are or could be active or in areas near or adjacent to HMS fishing areas are listed as threatened or endangered under the ESA (CH indicates that critical habitat has been designated as well).

Amphibians and Reptiles

Loggerhead sea turtle	<i>Caretta caretta</i>	T
Green sea turtle	<i>Chelonia mydas</i>	T
Leatherback sea turtle	<i>Dermochelys coriacea</i>	CH, E
Olive (=Pacific) ridley sea turtle	<i>Lepidochelys olivacea</i>	T

Fish

Chum salmon (Hood Canal summer, Columbia River)	<i>Oncorhynchus keta</i>	T
Coho salmon (Central California)	<i>Oncorhynchus kisutch</i>	T
Coho salmon (S. Oregon/N. Calif. Coast)	<i>Oncorhynchus kisutch</i>	T
Steelhead (Upper Columbia River, Southern California)	<i>Oncorhynchus mykiss</i> ssp.	E
Steelhead (Snake River Basin)	<i>Oncorhynchus mykiss</i> ssp.	T
Steelhead (Upper Willamette River)	<i>Oncorhynchus mykiss</i> ssp.	T
Steelhead (Columbia River)	<i>Oncorhynchus mykiss</i> ssp.	T
Steelhead (South-Central California, Central Valley, Northern California)	<i>Oncorhynchus mykiss</i> ssp.	T
Sockeye salmon (Snake River)	<i>Oncorhynchus nerka</i>	CH, E
Sockeye salmon (Ozette Lake)	<i>Oncorhynchus nerka</i>	T
Chinook salmon (Lower Columbia River)	<i>Oncorhynchus tshawytscha</i>	T
Chinook salmon (Upper Willamette River)	<i>Oncorhynchus tshawytscha</i>	T
Chinook salmon (Snake River Spring/Summer/Fall runs)	<i>Oncorhynchus tshawytscha</i>	CH, T
Chinook salmon (Sacramento River Winter, Upper Columbia Spring)	<i>Oncorhynchus tshawytscha</i>	E
Chinook salmon (Central Valley Spring, California Coastal)	<i>Oncorhynchus tshawytscha</i>	T
Tidewater goby	<i>Eucyclogobius newberryi</i>	E

Marine Mammals

Blue whale	<i>Balaenoptera musculus</i>	E
Fin whale	<i>Balaenoptera physalus</i>	E
Humpback whale	<i>Megaptera novaeangliae</i>	E
North Pacific right whale	<i>Eubalaena glacialis</i>	E
Sei whale	<i>Balaenoptera borealis</i>	E
Sperm whale	<i>Physeter macrocephalus</i>	E
Steller sea lion	<i>Eumetopias jubatus</i>	CH, T
Guadalupe fur seal	<i>Arctocephalus townsendi</i>	T
Southern sea otter	<i>Enhydra lutris nereis</i>	T

Birds

Short-tailed albatross	<i>Phoebastria albatrus</i>	E
Bald eagle	<i>Haliaeetus leucocephalus</i>	T
Brown pelican	<i>Pelecanus occidentalis</i>	E
California least tern	<i>Sterna antillarum browni</i>	E
Western snowy plover	<i>Charadrius alexandrinus</i>	T
Marbled murrelet	<i>Brachyramphus marmoratus</i>	CH, T
California clapper rail	<i>Rallus longirostris obsoletus</i>	E

Invertebrates

White abalone	<i>Haliotis sorenseni</i>	E
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D.1.2.2 ESA Consultation Process

Federal agencies have an affirmative mandate to use their legal authorities to conserve and restore listed species. One effect of this mandate is that federal actions, activities or authorizations (hereafter referred to as federal actions) must be in compliance with the provisions of the ESA. Section 7 of the ESA provides a mechanism for consultation by the federal action agency with the appropriate expert agency (NMFS or USFWS) as actions are being considered. Informal consultations, resulting in letters of concurrence, are conducted for federal actions that have no adverse effects on the listed species. Formal consultations, resulting in biological opinions, are conducted for federal actions that may have an adverse effect on the listed species. Through the consultation and preparation of the consequent biological opinion, a determination is made as to whether the proposed action poses “jeopardy” or “no jeopardy” of extinction to the listed species. If the determination is that the action proposed (or ongoing) will cause jeopardy, reasonable and prudent alternatives may be identified which, if implemented, would modify the action to no longer pose the jeopardy of extinction to the listed species. These reasonable and prudent alternatives (RPA) must be incorporated into the federal action if it is to proceed. A biological opinion with the conclusion of no jeopardy may contain a series of management measures (conservation recommendations) intended to further reduce the negative impacts to the listed species. These management alternatives are advisory to the action agency [50 CFR. 402.24(j)]. If a likelihood exists of any taking occurring during promulgation of the action, an incidental take statement may be appended to a biological opinion to provide for the amount of take that is expected to occur from normal promulgation of the action. An incidental take statement is not the equivalent of a permit to take. Incidental take statements may include reasonable and prudent measures, non-discretionary requirements of the action agency that are intended to minimize the effects of the incidental take. Terms and conditions for implementing the reasonable and prudent measures may also be included in the incidental take statement.

In the case of marine fisheries, NMFS Southwest Region’s Sustainable Fisheries Division consults with the Region’s Protected Resources Division to determine if the fishery, as it would be carried out under the fishery management plan, would likely jeopardize the continued existence of any listed species and, if so, what reasonable and prudent alternatives would be appropriate to prevent jeopardy or otherwise promote the recovery of the species in question. Under the consultative process, the Regional Administrator has recently

been delegated authority to issue the biological opinion. In the case of seabirds and marine mammals under the purview of the USFWS, the Southwest Region will formally consult with the USFWS when the FMP is under review for potential approval and implementation.

Even before the initiation of a section 7 consultation, the information and analyses in this FMP have been developed in coordination with the NMFS protected resources program staff and USFWS offices to ensure evaluation of the likelihood that the fisheries under this FMP would jeopardize any listed species. Chapter 9 discusses in detail the expected impacts of the proposed action and alternatives on these species and any identified critical habitat for listed species. Information from prior biological opinions has been drawn on substantially in these evaluations. Appendix E presents detailed information on the status of listed species and their designated critical habitat.

D.1.2.3 Historic NMFS Consultations - Drift Gillnet Fishery Biological Opinion

In 1997, NMFS issued a Biological Opinion on the implementation of the Pacific Offshore Cetacean Take Reduction Plan for the CA/OR drift gillnet fishery for swordfish and sharks, and found that the implementation of the take reduction plan would not jeopardize the continued existence of any endangered or threatened species associated with the fishery. However, in 1998, the CA/OR drift gillnet fishery exceeded the incidental take statement (exemption from the section 9 prohibition of the ESA) for loggerhead sea turtles, causing NMFS to request re-initiation of consultation in December 1999. In October 2000, NMFS determined that the continued implementation of the Pacific Offshore Cetacean Take Reduction Plan for the CA/OR drift gillnet fishery was not likely to adversely affect species listed under the ESA.

Subsequently, NMFS issued a biological opinion on October 23, 2000, on the issuance of a permit under section 101(a)(5)(E) of the MMPA to the CA/OR drift gillnet fishery for the taking of listed species under the ESA. In this biological opinion, NMFS evaluated the effects of the fishery as it would be practiced under the proposed action (i.e., consistent with a §101(a)(5)(E) marine mammal permit) on all threatened and endangered species, including sea turtles and marine mammals. NMFS concluded that issuance of the permit was likely to jeopardize the continued existence of both loggerhead and leatherback sea turtle populations by appreciably reducing the likelihood of both the survival and recovery of these species. It is important to note that loggerhead sea turtles are jeopardized only when the fishery operates during El Niño events, as loggerhead sea turtles have only been observed caught during these events. In order to avoid jeopardy, NMFS developed a RPA that consists of two management measures designed to avoid the likelihood of jeopardizing leatherback turtles and one management measure designed to avoid the likelihood of jeopardizing loggerhead turtles. There are no records of interactions with north Pacific right whales, and therefore there was no need to consider measures to prevent takes or adverse effects.

Specifically, the biological opinion determined that either NMFS or the States of California and Oregon must close an area to drift gillnets from Point Conception, California (34° 27' N latitude), north to 45° N latitude, and west to 129° W longitude, from August 15 to October 31 for a period of three years (2001-2003), to protect leatherback turtles. Also by August 1, 2001, NMFS or the States of California and Oregon must close an area to drift gillnets south of Point Conception, and west to 120° W longitude, from August 15 to August 31 and again from January 1 through January 31, during a forecasted or occurring El Niño event, to protect loggerhead turtles.

Additional requirements of the Biological Opinion included:

- a. CA/OR drift gillnet vessel operators and observers shall be educated on sea turtle biology and on methods that will reduce injury or mortality during fishing operations;
- b. Live capture sea turtles shall be released uninjured from the net in a manner that minimizes the likelihood of further gear entanglement or entrapment;
- c. NMFS shall continue to collect data on capture, injury and mortality of sea turtles in addition to life history information;
- d. Comatose and lethargic sea turtles shall be retained on board, handled, resuscitated (if feasible), and

- e. released according to the procedures outlined by NMFS; and
- e. Sea turtle mortalities shall be disposed of at sea unless an observer requests retention of the carcass for sea turtle research.

Subsequent to the Biological Opinion of October 2000, NMFS completed an “Environmental Assessment for the Interim final Rule to implement the reasonable and prudent alternative in the biological opinion related to the California/Oregon drift gillnet fishery.” This analysis examined a new DGN fishery option, proposed by the POCTRT and modified by NMFS, which would allow part of the fishery to remain open off central California (NMFS, 2001). In this modified option, the open season was extended from August 15 to run through November 15. The area of the new closure would start at Point Sur (36° 18.5' N latitude) and continue southwest to 34° 27' N latitude, 123° 35' W longitude, then turn west to 34° 27' N latitude, 129° W longitude. The western limit would then run north to 45° N latitude, 129° W longitude and finally move east along the 45° N parallel until it intercepts the Oregon coast. NMFS made the determination based on lack of observed takes of leatherback sea turtles in the past and new information on their movement which shows they move southwest in a corridor that is outside the area where fishing will take place. The interim rules were published in the Federal Register on August 24, 2001 (50 CFR Parts 223 and 224). Under the terms and conditions of the Incidental Take Statement, the drift gillnet fishery is anticipated to experience the estimated and observed entanglements and/or mortalities under the §101(a)(5)(E) permit as presented in Table 6-1.

Since this last biological opinion, there has been only one observation of a sea turtle take - a loggerhead turtle taken and released alive during the 2001-2002 season.

Table 6-1: Estimates of expected entanglement and mortality of listed species in DGN fishery under regulations of 8/24/01.

Species	Estimated Entanglement	Estimated Mortality	Total Expected Observations ¹
Fin whale	6 in 3 years	6 in 3 years	1
Humpback whale	6 in 3 years	0	1
Sperm whale	6 in 3 years	4 in 3 years	1
Steller sea lion	5 in 3 years	5 in 3 years	1
Green turtle	6 in 3 years	2 in 3 years	1
Leatherback turtle	9 in 3 years	6 in 3 years	1
Loggerhead turtle	5 per El Niño year	2 per El Niño year	1 per El Niño year
Olive ridley turtle	6 in 3 years	2 in 3 years	1

¹Total expected observations of an entanglement or mortality over the three year permit period.

D.1.2.4 Historic Consultations - Other West Coast HMS Fisheries

The large purse seine fishery for tuna covered under the IATTC Convention was the subject of a consultation following implementation of the International Dolphin Conservation Program Act (IDCPA). The only listed species taken in that fishery are sea turtles (see D.2.5.2). A consultation for the IDCPA indicated that management of the fisheries under that program would not jeopardize the continued existence of any species.

No other West Coast HMS fisheries have been subject to ESA Section 7 consultations to date. Further, the

consultations have focused on sea turtles and short-tailed albatross and not other listed species. The conservation and management measures proposed in this FMP will be subject to consultations before their implementation with respect to all listed species.

It should be noted that management of the longline fishery for tuna and swordfish based in Hawaii has been the subject of several NMFS consultations addressing concerns due to the takes of listed sea turtles and potential interactions with short-tailed albatross (STAL), while other western Pacific HMS fisheries were addressed in the March 29, 2001 opinion covering all western Pacific pelagic fisheries. The latest of the longline fishery consultations (November 2002) concluded that the fishery would not pose jeopardy to any species of sea turtles as a result of conservation actions to prohibit swordfish sets and close a portion of the central Pacific near the equator. In addition, an opinion from the USFWS has addressed concerns about potential impacts of the longline fishery on the listed short-tailed albatross. While the USFWS opinion concluded that the longline fishery would not pose jeopardy for that species, several reasonable and prudent measures were identified to reduce the likelihood of sea bird takes. Together, these opinions have significantly reduced fishing opportunities for the vessels in that fishery and have resulted in increasingly stringent controls on the fishery, including prohibition of the strategy that targets swordfish (rather than tuna) and time and area closures to minimize interactions with sea turtles, as well as requirements for the use of seabird avoidance gear and techniques. This FMP proposes that the same sea turtle protective measures be applied to West Coast-based longline vessels operating west of 150° W longitude to ensure that the controls are applied consistently to all U.S. longline fishing vessels in those waters. On the other hand, the prohibition of swordfish targeting by longline vessels east of 150 ° W longitude would not be applied as there is insufficient evidence that longline fishing in these waters would pose problems with respect to sea turtle takes.

No Section 7 consultation has been conducted relative to the potential impacts of the West Coast longline fishery on sea turtles because there have in the past been no federal actions to regulate that fishery. Permits have been issued under the High Seas Fishing Compliance Act to vessels that longline on the high seas, but those are not conditional permits and are not tied to specific fisheries or gear. Because there is no discretion associated with issuance of these permits, it has been concluded that Section 7 consultation requirements do not apply to that action. Similarly, NMFS has not initiated consultations with the USFWS with respect to potential impacts of longline fishing on short-tailed albatross. Again, there has been no federal action to trigger a consultation under Section 7 of the ESA.

D.1.3 Interactions with Seabirds

Several HMS fisheries have reported or observed interactions with seabirds, some of which are listed under the Migratory Bird Treaty Act (MBTA) and/or the ESA. The MBTA, enacted in 1918, implemented the 1916 convention between the U.S. and Great Britain (for Canada) for the protection of migratory birds. Later amendments implemented treaties between the U. S and Mexico, Japan and the Soviet Union. Specific provisions of the act include federal prohibitions, unless permitted by regulation, to “pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, caused to be shipped, deliver for transportation, transport, cause to be transported, carry, cause to be carried by any means whatever, any migratory bird, included in the terms of the Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird.” (16 U.S.C. 703). The ESA has been described above.

While the area of jurisdiction of the MBTA is currently under review in the U.S., the U.S. has adopted its National Plan of Action-Seabirds (NPOA-S). Although not a law, the NPOA-S constitutes national policy relating to interaction of seabirds with longline fisheries (see below).

D.1.3.1 Species of Concern

Three species of albatross are known to occur within the region: the black-footed albatross (BFAL, *Phoebastria nigripes*), the Laysan albatross (LAAL, *P. immutabilis*) and the STAL (*P. albatrus*). STAL are listed as endangered. According to Cousins and Cooper (2000) and various researchers they cite, the BFAL is the most abundant albatross off the West Coast of Canada and the United States, ranging throughout the north Pacific between 20° N latitude and 58° N latitude, but more eastern in its at-sea distribution than the LAAL. The estimated number of BFAL worldwide is approximately 290,000, of which 58,000 pairs (116,000 birds) bred in 2001/2002 (USFWS data, 2002). The conservation status for BFAL under the World Conservation Union (IUCN) criteria for threatened species is 'Vulnerable,' because of an observed 20% or more population decrease over three generations (~45 years). While the LAAL is less common in our region, it is the most abundant albatross Pacific-wide (est. 2,200,000 individuals, USFWS data, 2002), being most abundant in the central and western Pacific (Cousins and Cooper 2000). Numbers of breeding LAAL have declined over the last five years in the two largest colonies of this species (USFWS data 2002). IUCN status for the LAAL is "Lower Risk-Least Concern." Both the BFAL and LAAL nest principally in the Hawaiian Islands, mate for life, and lay only one egg in a single season. The BFAL occurs off the West Coast primarily from spring through fall but can be found year round; breeding birds begin returning to the Hawaiian Island chain in October. During egg-laying, incubation, and early chick feeding, which lasts from December through March, these birds are generally more concentrated near the breeding islands, although some may still travel considerable distances. The LAAL also occurs uncommonly off the West Coast year round, primarily in summer during the non-breeding season.

The STAL has rarely been sighted off the West Coast of the United States or off Mexico in recent history, and has not been observed to interact with any West Coast HMS fishery. It is nonetheless highly endangered, has historically occupied West Coast EEZ waters, and will likely return to its former range as its population recovers (and may have already begun to do so). Of the 23 sightings of this species off the West Coast since 1947, 74% have been made in the last two decades (1983-2000) with 88% occurring from August through January (Roberson 2000). This temperate and subarctic species breeds only on the western Pacific islands of Torishima and Minami-Kojima in Japan. The most recent estimate of its population includes 1,700 individuals on Toroshima and 200-250 individuals from Minami-Kojima, not including the results of 2002 breeding (K. Rivera, NMFS, Alaska Region, Pers. comm. 2002). In summer (i.e., the non-breeding season), individuals appear to disperse widely throughout the historical range of the north Pacific, with observed concentrations in the northern Gulf of Alaska, Aleutian Islands, and Bering Sea. Individuals have been recorded as far south as the Baja Peninsula and south to about 20° N latitude off the Pacific coast of Mexico (USFW 2000). Its current distribution may also be complicated by identification problems. For the untrained observer, even though the STAL is the largest albatross and has an extremely large pink bill, during its various plumage stages it can be confused with BFAL and LAAL (Mitchell and Tristram 1997). The STAL is currently listed as "Endangered" throughout its range under the ESA, now including U.S. waters (FR: July 31, 2000 Vol. 65(14) p. 46643-46654). The BFAL and LAAL are not listed under the ESA but they and some other seabirds are protected under the MBTA where it applies.

The brown pelican remains endangered in California, Texas, and Louisiana, as well as outside the U.S. It has been removed from the endangered species list on the U.S. Atlantic and Florida Gulf coasts. The bald eagle occurs along the coast and is listed as threatened. The California least tern and California clapper rail are listed as endangered.

D.1.3.2 Incidental Takes of Seabirds in West Coast HMS Fisheries

The level of incidental catch of seabirds is reasonably well documented for one U.S. West Coast HMS fishery (the drift gillnet fishery) but unknown or poorly understood for other fisheries (e.g., coastal purse seine, troll, California-based high-seas longline). The drift gillnet fishery has had about a 20 percent observer coverage level the past 10 years, and in the past decade, 16 northern fulmar and 4 "unidentified" seabirds have been recorded by observers. Recently, NMFS has received funding for observers to monitor the California-based high seas longline fishery that fishes beyond the EEZ (~40 active vessels in 2000, D. Petersen, pers. comm. NMFS SWR Observer Program). Data collection began in 2001 and expanded in late 2002, but the utility of the results prior to 2003 will not be known until it is clear what portion of fishing effort has been covered and

possibly not until after at least a year of coverage. Bird interactions in the HMS recreational fisheries have never been documented, but from anecdotal accounts, most appear to involve pelicans and cormorants that become hooked while chasing hooked bait. These birds reportedly are de-hooked and released alive. The brown pelican remains endangered in California as well as outside the U.S. There are unpublished observer records of two seabird interactions in with the troll albacore fishery. There are no records of takes of any seabirds in purse seine or harpoon fisheries off the West Coast. Comprehensive seabird monitoring and refinement of mitigation measures are therefore recommended for HMS fisheries to ensure complete and accurate information on seabird interactions and the effectiveness of measures to reduce seabird takes. Of primary concern is the potential for seabird interactions with longline fisheries, to which albatrosses, especially younger and more inexperienced birds, are vulnerable (Cousins and Cooper 2000).

D.1.3.3 Interactions and the NPOA-Seabirds

The NPOA-S was prepared to guide U.S. implementation of the International Plan of Action for conservation of seabirds taken in longline fisheries (including bottom and pelagic longline use). The NPOA-S provides an action plan to reduce the incidental catch of seabirds in U.S. longline fisheries, provides national-level policy guidance on reducing the incidental catch of seabirds in U.S. longline fisheries, and requires that NMFS, in cooperation with FWS, assess all U.S. longline fisheries to determine whether a seabird incidental catch problem exists. This NPOA-S further requires NMFS, in cooperation with FWS, to work through the regional fishery management council process in partnership with longline fishery representatives to develop and implement seabird incidental catch mitigation measures in those fisheries that have a seabird incidental catch problem. Such measures should attempt to reduce the incidental catch of seabirds to the maximum extent practicable.

The longline fishery authorized under the HMS FMP has been assessed for the incidental catch of seabirds, and actions are proposed to prevent and reduce the incidental catch of seabirds to the maximum extent practicable. NMFS would be required to increase observer coverage on West Coast longline vessels to obtain more complete and reliable data on the extent of interactions. NMFS has been cooperating with the FWS in Hawaii and will do so on the West Coast as well. The FMP initially proposes that the seabird avoidance requirements applicable to Hawaii-based longline vessels also be applied to West Coast-based longline vessels to minimize the risk of adverse effects on seabirds (and especially STAL) while more information is obtained through the observer program.

D.2 Protected Species Interactions and HMS Fisheries

D.2.1 Drift Gillnet Fishery

D.2.1.1 Marine Mammal Interactions

The drift gillnet fishery for swordfish and sharks has existed off the West Coast since 1977 (Hanan *et al.*, 1993). Beginning in 1980, CDFG started collecting logbooks, a practice which continues to the present. The logs are released to NMFS for analysis. Since 1980, with the exception of a few years, either the CDFG or NMFS has fielded an observer program to record catch, bycatch, and interactions with protected species.

Based on the recommendation of the Pacific Scientific Review Group (a group of non-federal scientists that provide NMFS with advice regarding marine mammal research and population estimates, status and trends), NMFS has determined that with the implementation of the Pacific Offshore Cetacean Take Reduction Plan in 1997, the most representative data to use for estimating marine mammal mortality and serious injury is NMFS observer data since the implementation of the plan (1997 through 2000). The basis for this decision is that cetacean mortality and serious injury have significantly decreased since the plan was implemented in 1997. Therefore, estimated marine mammal mortality and serious injury during the past three years will be used in the discussion.

Table 6-2 shows the estimated mortality of cetaceans and pinnipeds in the California drift gillnet fishery based

on observer data. Takes of most species remain below 10% of PBR for the past three years, the period when fishing has been subjected to the requirements of the Pacific Offshore Cetacean Take Reduction Plan. Although the estimated mortality and serious injury of the sperm whale and fin whale are above 10% of PBR, NMFS has determined that the human caused mortality and serious injury from commercial fisheries are negligible and do not pose jeopardy to the species.

The estimated mortality of small cetaceans based on gillnet observer data is found in Table 6-3. Takes of most species remain at or below 4% of PBR for the past three years, the period when fishing has been restricted by recommendations of the POCTRT. Catches of short-finned pilot whales and northern right-whale dolphins are higher at 16% and 35% of PBR, respectively.

Table 6-2 Estimated California Gillnet Cetacean and Pinniped Mortality Summary 1990 Through 2000
Based on NMFS Observed Data

SPECIES	90	91	92	93	94	95	96	97	98	99	00	Avg. 97-00	2000 PBR	% 2000 PBR
WHALES														
Blue whale	0	0	0	0	0	0	0	0	0	0	0	0.0	1.7	0
Fin whale	0	0	0	0	0	0	0	0	0	5	0	1.3	2.1	60
Gray whale	0	0	0	0	0	0	0	0	5	5	0	2.5	490	1
Humpback whale	0	0	0	0	0	0	0	0	0	0	0	0.0	1.7	0
Minke whale	0	0	0	0	0	0	12	0	0	0	0	0.0	4	0
Sei whale	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0
Sperm whale	0	0	7	15	0	0	1	0	5	0	0	1.3	2.0	63
Unid. Whale	0	0	0	7	0	0	0	0	0	0	0	0.0	--	0
Total whales	0	0	7	22	0	0	13	0	10	10	0	5.1		
PINNIPEDS														
Calif. sea lion	46	41	66	82	28	26	36	210	114	30	54	99.8	6591	2
Guadalupe fur seal	0	0	0	0	0	0	0	0	0	0	0	0	104	0
Harbor seal	23	0	0	0	0	0	0	0	0	0	0	0	1678	0
No. Elephant seal	115	132	110	105	123	90	37	45	20	10	26	25.3	2142	1
Steller's sea lion	0	0	7	0	6	0	0	0	0	0	0	0	1368	0
Unid. Sea lion	46	0	0	0	0	0	0	0	0	0	0	0	--	0
Total Pinnipeds	230	173	183	187	157	116	73	246	134	40	80	125		
% observed sets	4.4	9.8	13.6	13.4	17.9	15.6	13.	22.8	17.6	21.0	25.0			

Table 6-3 Estimated California Gillnet Small Cetacean Mortality Summary 1990 Through 2000 Based on NMFS Observed Data

SPECIES	90	91	92	93	94	95	96	97	98	99	00	Avg 97- 00	2000 PBR	% 2000 PBR
Baird's beaked whale	0	0	0	0	0	0	0	0	0	0	0	0.0	2	0
Bottlenose dolphin	0	0	22	0	0	0	0	0	0	0	0	0.0	8.5	0
Common dolphin, unid.	92	71	37	30	6	0	0	5	0	2	0	2.3	--	--
Common dolphin, long beak	0	0	15	0	6	39	12	25	0	8	9	10.5	250	4
Common dolphin, short beak	92	376	287	179	140	231	319	101	45	191	75	103	3188	3
Cuvier's beaked whale	0	0	44	22	34	32	0	0	0	0	0	0.0	43	0
Dall porpoise	23	20	7	67	11	6	24	20	0	0	0	5.0	737	1
Killer whale	0	0	0	0	0	6	0	0	0	0	0	0.0	2.1	0
Mesoplodont beaked whale	23	0	29	0	17	0	0	0	0	0	0	0.0	27	0
No. right whale dolphin	0	71	15	52	39	58	27	29	0	17	47	23	97	24
Pacific-white sided dolphin	69	51	22	15	17	6	25	12	0	0	5	4.3	157	3
Risso' dolphin	0	51	37	52	6	39	0	11	0	0	7	4.5	105	4
Short-finned pilot whale	23	0	7	60	0	0	0	6	0	0	0	1.5	5.7	26
Striped dolphin	0	0	0	0	6	0	0	0	0	0	0	0.0	180	0
Pygmy sperm whale	0	0	7	7	0	0	0	0	0	0	0	0.0	28	0
Unid. Beaked whale	0	0	15	0	6	0	0	0	0	0	0	0.0	--	--
Unid. Cetacean	0	10	7	0	0	0	0	0	0	0	0	0.0	--	--
Unid. dolphin	0	0	7	0	0	0	0	0	0	0	0	0.0	--	--
Total small cetaceans	322	650	558	484	288	417	407	209	45	218	143			
% observed sets	4.4	9.8	13.6	13.4	17.9	15.6	13.0	22.8	17.6	21.0	25			

D.2.1.2 Endangered and Threatened Species Interactions

In the 2000 Biological Opinion cited earlier, NMFS addressed the incidental take of marine mammals and sea turtles (Table 6-4) listed under the ESA in the drift gillnet fishery. NMFS found that the take of leatherback and loggerhead turtles incidental to commercial fishing operations by the CA/OR drift gillnet fishery was likely to jeopardize the continued existence of these stocks and developed a reasonable and prudent alternative to mitigate this effect. With the development of the RPA, NMFS issued an incidental take statement that anticipates the level of take under the RPA. This level of take is exempt from the Section 9 ESA take prohibition and NMFS believes will avoid the likelihood of jeopardizing the continued existence of the leatherback and loggerhead sea turtle populations. To this end, NMFS authorized a take of nine leatherbacks in three years and a mortality of six over a three year period. The incidental take statement for loggerheads is not expected to exceed five takes with two mortalities during any given year that there is an El Niño event. For olive ridley and green turtles, NMFS does not anticipate there to be more than six takes, or more than two mortalities, in three years.

Table 6-4 Estimated California Total Drift Gillnet Sea Turtle Mortality Summary 1990 Through 2000 Based on NMFS Observed Data

SPECIES	90	91	92	93	94	95	96	97	98	99	00
Loggerhead turtle	0	0	7	0	0	0	0	6	5	0	0
Leatherback turtle	23	0	15	15	0	26	24	7	0	0	0
Green turtle	0	0	0	0	0	0	0	0	0	5	0
Unid. turtle	0	0	0	7	0	0	0	0	0	0	0
% observed sets	4.4	9.8	13.6	13.4	17.9	15.6	13.0	22.8	17.6	21.0	25

There have been no observed salmon species or cutthroat trout captured by the CA/OR drift gillnet fishery based on NMFS data collected from July 1990 through January 2001.

There have been no recorded or reported interactions between the drift gillnet fishery and southern sea otters.

Information on the incidental mortality and serious injury of marine mammal stocks that are listed under the ESA was presented in the above section under marine mammal interactions.

D.2.1.3 Seabird Interactions

Observer data from the drift gillnet fishery showed few interactions with seabirds. The California-Oregon drift gillnet fishery for swordfish and shark has had ~20% observer coverage since 1990, and since then, 16 northern fulmar and 4 'unidentified seabird' takes have been recorded by observers (NMFS Observer data). From 1990 through 2000, the estimated mortality was 42. There was an estimated mortality of 23 unidentified seabirds in 1990, 6 unidentified seabirds in 1994, and 13 northern fulmars in 2000. From 1995 to 1999, there was no seabird mortality. There are no records or observations of nor any evidence to suggest there would be any interactions between drift gillnet gear and short-tailed albatross, bald eagles, California least tern, western snowy plover, marbled murrelet, or California clapper rail.

D.2.2 Surface Hook & Line Fishery (troll and live bait)

D.2.2.1 Marine Mammal Interactions

The surface hook-and-line fishery targets albacore primarily in the eastern and central Pacific ocean. Little

data are available on marine mammal interactions in the fishery. What is available comes from either logbooks or an extremely limited observer program run by NMFS (27 trips in 8 years). Since observers were not required to collect interaction data, and the observer program was not conducted in a systematic fashion, a complete analysis of interactions is not possible. Logbooks show no interactions with marine mammals, and the observer data have yet to be analyzed (Norm Bartoo, NMFS-La Jolla, personnel communications).

There are no observer data or logbook data for live-bait boats fishing for albacore off the West Coast, so the extent, if any, of marine mammal interactions is unknown. Most fishing occurs many miles from shore, so the likelihood of interactions with pinnipeds is low.

D.2.2.2 Endangered Species Interactions

The drift gillnet 2000 Biological Opinion states that anecdotal information indicates there are rare occurrences of sea turtle take in the U.S. albacore fishery (NMFS, 2000). However, it is not possible to determine if any turtles were killed or seriously injured based on available data.

Because of the nature of the live-bait fishery, there should be no interactions with turtles when fishing. There is the possibility, however remote, of capturing a sea turtle alive while catching bait. If a sea turtle were taken while catching bait, it could be easily released.

The extent of salmon interactions is unknown because the fishery is not observed in a scientifically designed observer program. However, albacore troll fishing technique and strategy differ from those used in trolling for salmon. While troll albacore vessels often carry both gears, and operators may shift strategy from albacore to salmon, or from salmon to albacore, depending on the availability of the different species in the area being fished, the likelihood of taking a listed salmon when targeting albacore is very low.

In 1997, one humpback whale was snagged by a central California troller (though this injury was not considered serious).

D.2.2.3 Seabird Interactions

This HMS fishery is not regularly observed. Incidental takes of 'albatrosses, unid.' are known to occur in the albacore troll fishery but appear to be infrequent (Cousins and Cooper 2000 citing Bartoo). The extent of seabird interactions is unknown because observer placements on vessels in the fishery have been very rare and observers were not directed to record interactions. There are no records or observations of nor any evidence to suggest there would be any interactions between troll gear and short-tailed albatross, bald eagles, California least tern, western snowy plover, marbled murrelet, or California clapper rail.

D.2.3 Pelagic Longline Fishery

D.2.3.1 Marine Mammal Interactions

Vessels fishing in the far offshore longline fishery (outside the EEZ) were required to submit logs to the States of California and Oregon until 2000. Beginning in 2000, NMFS high-seas logbooks were required. Between August 1995 through December 1999, data were collected from 33 different vessels that fished a total of 2,090 days and set 7,071,745 hooks. Some of the vessels began and ended their fishing trips in California. However, some of the vessels began their trips in Hawaii and ended in California. The data are preliminary and have not been edited. Only two interactions with marine mammals were noted; one monk seal and one unidentified sea lion were reported released.

D.2.3.2 Endangered Species Interactions

In the past year, substantial information has been obtained and analyzed concerning the rates and levels of sea turtle interactions in the waters fished by West Coast-based longline vessels. This includes data extracted

from the data base of observations made by observers placed on vessels in Hawaii that fished in the eastern Pacific (i.e., east of 150° W longitude) and data collected by observers placed on vessels in California and that fished east of 150° W longitude. These data, which were presented to the Council by NMFS in March and June 2003, are discussed in detail in Section 9.2.5.2.2 and associated tables (see original FMP/FEIS). They demonstrate that there is little difference in interaction rates with leatherback and loggerhead sea turtles west and east of 150° W longitude, though there does appear to be a decrease in interaction rates with loggerhead turtles as fishing occurs closer to the West Coast. It is estimated by NMFS that, if fishing effort remains at the 1.55 million hook level estimated for 2002, and all fishing occurred east of 150° W longitude, the longline fishery would take approximately 174 loggerhead and 53 leatherback turtles per year. It is possible that annual loggerhead takes would be lower if fishing were restricted to waters closer to the West Coast, but it appears that leatherback takes would be the same, assuming that effort relocated to waters in which swordfish targeting was permitted and remained at the 1.55 million hook level. The Council is aware that there may be a need for additional conservation and management measures to protect sea turtles but needs further guidance from NMFS before being able to consider and recommend such measures. It is noted that NMFS will conduct a Section 7 consultation under the ESA which may propose reasonable and prudent alternatives to ensure that the fishery does not jeopardize the continued existence of any sea turtle populations. If provided with such information, the Council will act accordingly.

There have been no reports of takes of short-tailed albatross but seabird conservation measures are recommended for consistency with the NPOA.

There have been no reports of interactions with any other listed seabirds by the longline fishery nor is there reason to expect that there would be any such interactions as the fishery would only be pursued beyond the EEZ and out of the range of the other listed seabirds.

There are no reported takes of salmonid species by these vessels.

There have been no reported takes of listed marine mammals by these vessels.

D.2.3.3 Seabird Interactions

Albatross interactions are moderately frequent based on the California observer data referenced above. On 13 observed trips, a total of 62 albatross were recorded as being taken; 58 were black-footed albatross and 4 were Laysan albatross. No short-tailed albatross were observed.

As noted above and discussed in Section D.3.2 below, this FMP proposes a variety of measures to minimize the risk of adverse impacts on seabirds such as albatross.

There are no records or observations of, nor any evidence to suggest there would be any interactions between longline gear and short-tailed albatross, bald eagles, California least tern, western snowy plover, marbled murrelet, or California clapper rail.

D.2.4 Harpoon Fishery

D.2.4.1 Marine Mammal Interactions

Because of the deliberate nature of the harpoon fishery, there are few interactions with marine mammals. As stated in Appendix C, Section C.3.4, there may be minimal interactions with sea lions if they are depredating harpooned fish before retrieval.

D.2.4.2 Endangered Species Interactions

There are no records or observations of interactions with any endangered species.

D.2.4.3 Seabird Interactions

There are no records or observations of nor any evidence to suggest there would be any interactions between harpoon gear and short-tailed albatross, bald eagles, California least tern, western snowy plover, marbled murrelet, or California clapper rail.

D.2.5 Large Vessel Tuna Purse Seine Fishery (>400 short tons)

D.2.5.1 Marine Mammal Interactions

Large vessels fishing for tuna in the EPO under jurisdiction of the Inter-American Tropical Pacific Tuna Commission (IATTC) are governed by the International Dolphin Conservation Program (NMFS, 1999). The overall dolphin mortality limit set for the fleet for 1998 was 6,500 animals. Observer data from 1998 showed total dolphin mortality caused by the fishery to be 1,877 animals (IATTC, 2000). No other marine mammal interactions were noted by observers.

D.2.5.2 Endangered Species Interactions

Observer data from IATTC for the period 1994 through 1996 showed that 2,015 olive ridley turtles were encountered in purse seine sets, of which 75% were encountered in sets on floating objects, 12% on free-swimming schools of tuna, and 13% in dolphin sets (IATTC, 2000). Similar data for green turtles shows that 943 were encountered in purse seine sets, of which 47% were in sets on floating objects, 50% in free-swimming schools of tuna, and 3% in dolphin sets. Lesser numbers of loggerhead (86), hawksbill (32) and leatherbacks (10) were also encountered; nearly all of these were released in good condition.

The recent Biological Opinion on drift gillnets examined the estimated mortality of sea turtles captured in the EPO large vessel purse seine fishery for the period 1993 through 1997 (NMFS, 2000). The yearly average mortality for the period was: olive ridley (143), green/black (21), loggerhead (5), and leatherback (0).

D.2.5.3 Seabird Interactions

There are no records or observer data documenting large purse seine vessels' interactions with any species of seabird in the EPO. Brown pelicans and other species may dive into fish concentrated within or in the vicinity of purse seines in pursuit of bait fish, but there are no documented entanglements leading to injury or death. There are no records or observations of nor any evidence to suggest there would be any interactions between large scale purse seine gear and short-tailed albatross, bald eagles, California least tern, western snowy plover, marbled murrelet, or California clapper rail.

D.2.6 Coastal Purse Seine Fishery (<400 short tons)

D.2.6.1 Marine Mammal Interactions

No observer data or other records are available indicating interactions with marine mammals in the small-vessel purse seine tuna fishery. There are records indicating occasional interactions with small purse seine vessels when fishing for coastal pelagic species such as Pacific mackerel and sardine. However, neither the IATTC nor NMFS places observers on these vessels when fishing for tuna, though NMFS hopes to begin doing so in 2003 or early 2004.

D.2.6.2 Endangered Species Interactions

Since the IATTC does not observe vessels with carrying capacity of less than 400 tons, no observer data are

available about interactions with turtles in the fishery. Because there were documented interactions with turtles in the purse seine fishery for larger vessels, the same is probably true for small vessels. The interactions are probably with turtles found more in temperate waters (loggerheads, hawksbill, and leatherbacks) than those found in tropical waters (olive ridley and green). In its Biological Opinion for the IDCPA, NMFS stated the capture of a turtle by the small vessel fleet would be a rare event.

There are no records indicating the occurrence or risk of taking of any listed salmon by small coastal purse seine vessels fishing for tuna.

D.2.6.3 Seabird Interactions

Neither IATTC nor NMFS has placed observers on small purse seine vessels with carrying capacity of less than 400 tons; therefore, there are no observer data available about interactions with seabirds in the small tuna purse seine fishery. However, there is no reason to expect interactions at a different rate than those by large purse seine vessels. Since large purse seine vessels > 400 short tons (with IATTC observer coverage) have no documented bird interactions, the same is probably true for smaller vessels, although documentation is needed. There have been occasional interactions with seabirds when small purse seine vessels set on coastal pelagic species such as Pacific mackerel and sardine.

There are no records or observations of nor any evidence to suggest there would be any interactions between small scale purse seine gear and short-tailed albatross, bald eagles, California least tern, western snowy plover, marbled murrelet, or California clapper rail.

D.2.7 Party/Charter Boat Fishery

D.2.7.1 Marine Mammal Interactions

The party/charter boat fleet fishing offshore (> 25 miles from land) for HMS has few interactions with marine mammals. The majority occur when they have stopped to fish and are actively chumming. At this time, California sea lions may be attracted to the vessel and actively eat the chum or attempt to eat fish that have been hooked by anglers. No independent observer data are available for this fishery. CDFG does collect logbook data on number of fish lost to sea lions but the data have never been analyzed.

Party/charter vessels working off southern California occasionally fish in the vicinity of dolphins or large whales. Tuna are often found in association with these animals. The interactions are limited to moving/fishing alongside the animals, behind the animals or stopping the vessel in front of the animals and attempting to chum the school of fish away from animals and toward the boat.

D.2.7.2 Endangered Species Interactions

There are no known interactions between party/charter vessels and turtles. Most party/charter vessels fishing off the West Coast operate in areas where turtles are seldom encountered, though some travel extensive distances in pursuit of tuna and other HMS.

D.2.7.3 Seabird Interactions

Party/Charter vessels fishing with live bait may interact with brown pelicans, cormorants, seagulls, shearwaters and petrels. These interactions take place when the vessels are actively chumming to attract tuna or other HMS species to the boat. Some birds may be hooked, but crew members quickly release the animals. Due to the lack of observer data, neither the number of interactions nor the survival rate is known. There are no records or observations of nor any evidence to suggest there would be any interactions between charter boat fishing gear and short-tailed albatross, bald eagles, California least tern, western snowy plover, marbled murrelet, or California clapper rail.

D.2.8 Private Recreational Boat Fishery

D.2.8.1 Marine Mammal Interactions

Presumably the same interactions that take place on party/charter boats take place on private vessels, but to a lesser extent since private vessels do not have the live bait carrying capacity of party/charter boats.

D.2.8.2 Endangered Species Interactions

There is no reason to expect different types of interactions with listed species on private boats than on party/charter boats, but they would likely occur even less frequently because many if not most private vessels do not have the live bait carrying capacity of party/charter boats.

D.2.8.3 Seabird Interactions

Presumably the same interactions that take place on party/charter boats take place on private vessels, but likely to a lesser extent as noted above because private vessels do not have the live bait carrying capacity of party/charter boats. Bird interactions in the HMS recreational fisheries have never been documented, but from anecdotal accounts, most appear to involve pelicans, gulls, and cormorants that become hooked while chasing baited hooks. Most are reportedly de-hooked and released alive. There are no records or observations of nor any evidence to suggest there would be any interactions between private boat recreational fishing gear and short-tailed albatross, bald eagles, California least tern, western snowy plover, marbled murrelet, or California clapper rail.

D.3 Initial Measures to Address Protected Species Concerns

This FMP proposes that the following initial measures be implemented to ensure that the fisheries as operating under the FMP will not have adverse impacts on any protected species.

D.3.1 Drift Gillnet Fishery

Section 6.2.1 in the FMP provides specific information about the initial conservation and management measures that would be continued under Magnuson-Stevens Act authority under this FMP. A summary follows:

Take Reduction Team (POCTRT) measures to protect marine mammals would be continued:

- Acoustic deterrent devices (pingers) are required on drift gillnets to deter entanglement of marine mammals.
- All drift gillnets must be fished at minimum depth below the surface of 6 fm (10.9 m).
- Skipper workshops are required.
- Vessels must provide accommodations for observers when assigned.

The Federal Turtle Conservation Closed Areas under the drift gillnet fishery management regulations would be maintained:

- Drift gillnet fishing may not be conducted:
 - In the portion of the EEZ bounded by a line south from Point Sur (36° 18.5' N latitude) to 34° 27' N latitude along the 123° 35' W meridian; then west to 129° W longitude; then north to 45° N latitude; then east to the point where the 45° N parallel meets land from August 15 to November 15 through year 2003 (see map, Chapter 9, Figure 9-1);
 - In the portion of the EEZ south of Point Conception, California (34° 27' N latitude) and west to 120°

W longitude from August 15 to August 31 and again from January 1 through January 31 during a forecasted or occurring El Niño, as announced by NMFS¹.

Mainland area and Channel Islands (California) closures would also be maintained in which drift gillnets cannot be used. These are listed in Section 6.2.1 in the FMP.

In addition, NMFS would be required to maintain observer coverage of this sector at statistically reliable levels.

D.3.2 Longline Fishing

Longline fishing inside the EEZ would be prohibited. Beyond the EEZ, all conservation and management measures that apply to Hawaii-based longline vessels to control sea turtle and seabird interactions and to monitor the fishery would also apply to West Coast-based longline vessels west of 150° W longitude. These are as follows:

1. Line clippers, dip nets, and bolt cutters meeting NMFS' specifications must be carried aboard each vessel for releasing turtles (specifications vary by vessel size);
2. A vessel may not use longline gear to fish for or target swordfish (*Xiphias gladius*) north of the equator (0° latitude); landing or possession of more than 10 swordfish per trip is prohibited.
3. The length of each float line possessed and used to suspend the main longline beneath a float must be longer than 20 m (65.6 ft or 10.9 fm).
4. From April 1 through May 31, a vessel may not use longline gear in waters bounded by 0° latitude and 15° N latitude, and 145° W longitude and 180° W longitude;
5. No light stick (any light emitting device for attaching underwater to the longline gear) may be possessed on board a vessel;
6. When a longline is deployed, no fewer than 15 branch lines may be set between any two floats (10 branch lines if using basket gear);
7. Longline gear must be deployed such that the deepest point of the main longline between any two floats, i.e., the deepest point in each sag of the main line, is at a depth greater than 100 m (328.1 ft or 54.6 fm) below the sea surface;
8. While fishing for management unit species north of 23°N lat, a vessel must:
 - Maintain a minimum of two cans (each sold as 0.45 kg or 1 lb size) containing blue dye on board the vessel during a fishing trip;
 - Use completely thawed bait to fish for Pacific pelagic management unit species;
 - Use only bait that is dyed blue of an intensity level specified by a color quality control card issued by NMFS;
 - Retain sufficient quantities of offal for the purpose of discharging the offal strategically in an appropriate manner;
 - Remove all hooks from offal prior to discharging the offal;
 - Discharge fish, fish parts (i.e., offal), or spent bait while setting or hauling longline gear on the opposite side of the vessel from where the longline is being set or hauled;
 - Use a line-setting machine or line-shooter to set the main longline (unless using basket gear);
 - Attach a weight of at least 45 g to each branch line within 1 m of the hook; and
 - Remove the bill and liver of any swordfish that is incidentally caught, sever its head from the trunk and cut it in half vertically, and periodically discharge the butchered heads and livers overboard on the opposite side of the vessel from which the longline is being set or hauled.
9. Other required measures include the proper release and handling of turtles and seabirds, the requirement for vessel operators to attend a protected species workshop each year, and the requirement for Vessel Monitoring Systems (VMS). VMS is required to facilitate enforcement of the area-specific

¹As of June 2003, a rule to modify the El Niño closure is being finalized. It proposes instead to prohibit fishing during the months of June, July, and August, which NMFS has concluded offers more protection for loggerheads while having less impact on the fishery than a closure in January and August.

regulations proposed.

Measures 1, 4, 8, and 9 would apply in all waters; measures 2, 3, 5, 6 and 7 in the list above would apply only to fishing west of 150° W longitude. Thus, longline fishing directed at the capture of swordfish would be permitted on the high seas west of the EEZ and east of 150° W longitude.

D.3.3 Coastal Purse Seine

The FMP would allow purse seine fishing in all portions of the EEZ. With few data to suggest any potential harmful bycatch or gear conflicts, this action would provide additional opportunity for purse seiners to fish for bluefin tuna in those years when they travel in fishable schools off Oregon and Washington, and could raise a potential for purse seining for albacore in the northwest portion of the EEZ.

Purse seine fishers targeting HMS from any state could fish anywhere in the EEZ, although there has been little interest in such fishing off Oregon and Washington.

D.3.4 Recreational Fishing

The FMP would require all commercial and recreational party/charter (CPFV) recreational fishing vessels to maintain and submit to NMFS logbook records of catch and effort statistics for all waters fished. The FMP also authorizes adjustment of reporting requirements under a framework process.

D.3.5 Other Fisheries

No immediate conservation and management measures are proposed for other fisheries. However, all HMS fishing vessel operators would be required to maintain and submit logbooks of fishing effort and catch and disposition of catch as well as interactions with protected species. All vessels also would be subject to the potential for carrying observers to document protected species interactions. The framework provisions of the FMP would be used to address new protected species concerns as they are identified. Both through the SAFE Report and through special reports from interested parties (which could include the USFWS or environmental organizations), the Council would be advised of the new concerns; would direct the plan team or others to investigate and recommend action; would determine if action is needed and, if it is viewed as a matter of substantial concern, would direct the completion of necessary documents to analyze the issues and evaluate alternatives; and would submit recommendations for corrective action to NMFS for consideration. If there were agreement, the regulatory actions would be implemented by NMFS.

See Chapter 8 for more detailed discussion of alternatives and Chapter 9 for analysis of the impacts of these proposed measures and alternatives.

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